NPDES PERMIT NO. NM0028533
STATEMENT OF BASIS

FOR THE DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE TO WATERS OF THE UNITED STATES

APPLICANT:	Alto Crest Water Treatment Plant No. 3 313 Cree Meadows Drive Ruidoso, NM 88345
ISSUING OFFICE:	U.S. Environmental Protection Agency Region 6 1445 Ross Avenue Dallas, Texas 75202-2733
PREPARED BY:	Maria Okpala Environmental Engineer NPDES Permits Branch (6WQ-PP) Water Quality Protection Division VOICE: 214-665-3152 FAX: 214-665-2191 EMAIL: okpala.maria@epa.gov
PERMIT ACTION:	Proposed reissuance of the National Pollutant Discharge Elimination System (NPDES) permit with an issuance date of July 27, 2001, an effective date of August 1, 2001, and an expiration date of July 31, 2006.
DATE PREPARED:	July 19, 2006
PAGES:	13 (TEXT) 8 (Attachment - Screening Evaluation)

40 CFR CITATIONS: Unless otherwise stated, citations to 40 CFR refer to promulgated regulations listed at Title 40, Code of Federal Regulations, revised as of July 7, 2006.

CERTIFICATION: The permit is in the process of certification by the State agency following regulations promulgated at 40 CFR124.53. A draft permit and draft public notice will be sent to the New Mexico Environment Department and the Village of Ruidoso Water Treatment Plant prior to the publication of the public notice. A copy of the public notice will be sent to those on the mailing list.

FINAL DETERMINATION: The public notice describes the procedures for the formulation of final determinations.

PUBLIC NOTICE AND EPA POINT OF CONTACT: Upon publication of the public notice and this fact sheet, a public comment period shall begin and last for 30 days thereafter. During this period, any interested persons may submit written comments on the draft permit to the EPA contact person listed below, and may request a public hearing to clarify issues involved in the permit decision. A public hearing request shall be in writing and shall state the nature of the issues proposed to be raised in the hearing.

For additional information, contact:

Ms. Diane Smith
Water Quality Protection Division
Planning & Analysis Branch (6WQ-NP)
U.S. Environmental Protection Agency
1445 Ross Avenue
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I. PROPOSED CHANGES FROM PROPOSED PERMIT

The changes from the current permit issued July 27, 2001, with an effective date of August 1, 2001, and an expiration date of July 31, 2006, are:

A. Limitation and monitoring requirements for total residual chlorine have been established in the proposed permit based on information submitted by the permittee.

B. Limitations, monitoring requirements, and a compliance schedule for gross alpha, total copper, total lead, total nickel, and total zinc have been established in the proposed permit based on information submitted by the permittee.

C. Whole effluent toxicity testing requirements have been included in the proposed permit based on the current "EPA Region 6 WET Permitting Strategy" as well as the State Narrative Toxics Implementation Guidance.

II. APPLICANT ACTIVITY

Under the Standard Industrial Classification (SIC) Code 4941, the applicant operates a surface water treatment plant (WTP). The plant's average flow rate is 0.104 million gallons per day (MGD).

III. DISCHARGE LOCATION

As described in the application, the plant site is located at 103 Eagle Way in the City of Ruidoso in Lincoln County, New Mexico. The discharge is to the receiving water named Eagle Creek. Eagle Creek continues as an ephemeral stream below the Alto Reservoir to its confluence with the Rio Ruidoso. The point of discharge from the WTP is estimated to be nine or more miles above the

perennial reaches of the Rio Ruidoso. It is unlikely that the effluent would reach the perennial water segment of the Rio Ruidoso, unless it is carried by a large storm event. Because of the distance from the Outfall to the perennial water, the water quality segment of 20.6.4.97, Ephemeral Waters, apply to this discharge location. The discharge is located at Latitude 33° 23' 42" N and Longitude -105° 40' 12" W.

IV. STREAM STANDARDS

The general and specific stream standards are provided in "New Mexico State Standards for Interstate and Intrastate Surface Waters," (20.6.4 NMAC, as amended through February 16, 2006).

V. RECEIVING WATER USES

The facility discharges into the receiving water named Eagle Creek, an ephemeral reach; thence to the Rio Ruidoso into Rio Hondo in Waterbody Segment No.20.6.4.209 of the Pecos River Basin. The designated uses of the receiving water, an ephemeral water, 20.6.4.97, are: Secondary Contact, Limited Aquatic life, Livestock Watering, and Wildlife Habitat.

VI. PROCESS AND DISCHARGE DESCRIPTION

A. PROCESS DESCRIPTION

The facility described in the application has an average backwash and flushing flow of 0.104 MGD. The water treatment plant utilizes chemical and physical treatment of water which is then distributed through the Alto Crest potable water system. These treatment processes include coagulation, flocculation, sedimentation, and filtration. The permit application is for the discharge of filter backwash and filter-to-waste water flow to a sedimentation basin prior to discharging at Outfall 001.

B DISCHARGE DESCRIPTION

A quantitative description of the estimated discharge described in the NPDES Form 2A Application Overview (EPA Form 3510-2A) signed January 27, 2006, and additional permit application information sent on July 11, 2006, via email is:

Pollutant	Maximum Daily Discharge, ug/l (unless noted)	Average Daily Discharge, ug/l (unless noted)
Aluminum, Total	15.20	13.1
Aluminum, Dissolved	18	15.4
Beryllium, Dissolved	13	13
Barium, Dissolved	90	58.1
Barium, Total	92	59.8

Pollutant	Maximum Daily Discharge, ug/l (unless noted)	Average Daily Discharge, ug/l (unless noted)
Boron, Dissolved	12.30	12.30
Total Residual Chlorine, mg/l	0.05	0.05
Cobalt, Dissolved	5	2.735
Copper, Dissolved	84	84
Molybdenum, Dissolved	29	29
Lead, Total	3	3
Nickel, Dissolved	141	141
Nickel, Total	257	257
Uranium	5	3.32
Gross Alpha (pci/l)	7.8	7.8
Fluoride, mg/l	2	1.65
Benzene	3.6	3.6
Selenium, Total	112	37.33
Selenium, Dissolved	86	28.67
Tolune	2.7	2.7
Phenol	14.6	15.6
Zinc, Dissolved	23	19.1
Zinc, Total	40	40
Total Suspended Solids (TSS), mg/l	9.9	4.0
Total Dissolved Solids, (TDS), mg/l	9.9	3.6
Average flow, MGD	0.43	0.104
pH (Standard Units)	7.9 s.u. maximum	6.9 s.u. minimum
Temperature ˚ F	Summer =20.6 ^{o}C Winter = 14.8 ^{o}C	

C SLUDGE MANAGEMENT, PRETREATMENT, OPERATION and MONITORING, POLLUTION PREVENTION and REPORTING FOR POTW's.

Sewage Sludge Requirements: None

The facility does not generate any sewage sludge.

Operation and Monitoring:

The applicant is required to operate the treatment facility at maximum efficiency at all times; to monitor the facility's discharge on a regular basis; and report the results monthly. The monitoring results will be available to the public.

VII. TENTATIVE DETERMINATION

On the basis of preliminary staff review and after consultation with the State of New Mexico, the Environmental Protection Agency has made a determination to reissue a permit for the discharge described in the application.

VIII. DRAFT PERMIT RATIONALE

The following section sets forth the principal facts and the significant factual, legal, methodological, and policy questions considered in preparing the draft permit. Also set forth are any calculations or other necessary explanations of the derivation of specific effluent limitations and conditions, including a citation to the applicable effluent limitation guideline or performance standard provisions as required under 40 CFR122.44 and reasons why they are applicable or an explanation of how the alternate effluent limitations were developed.

A. REASON FOR PERMIT ACTION

The permit application signed January 27, 2006, was received by EPA, Region 6 on January 30, 2006. The permit application was determined to be administratively complete and a completeness letter dated March 02, 2006, was sent to the facility. However, additional application data was sent on July 11, 2006, July 16, 2006, and July 18, 2006, via email. It is proposed that the expiration date of this permit be five (5) years from the permit effective date.

B. TECHNOLOGY-BASED VERSUS WATER QUALITY STANDARDS-BASED EFFLUENT LIMITATIONS AND CONDITIONS

Following regulations promulgated at 40 CFR122.44(l)(2)(ii), the draft permit limits are based on either technology-based effluent limits pursuant to 40 CFR122.44(a) or on State water quality standards and requirements pursuant to 40 CFR122.44(d), or the previous permit, whichever are more stringent.

Technology-based effluent limitations are established in the proposed permit for the following pollutant:

Total Suspended Solids (TSS)

Water quality-based effluent limitations are established in the proposed permit for the following pollutants:

Total Residual Chlorine (TRC), pH, Gross Alpha, Copper, Lead, Nickel, Selenium & Zinc

C. TECHNOLOGY-BASED EFFLUENT LIMITATIONS/CONDITIONS

1. GENERAL COMMENTS

Regulations promulgated at 40 CFR122.44(a) require technology-based effluent limitations to be placed in NPDES permits based on effluent limitations guidelines where applicable, on BPJ (best professional judgment) in the absence of guidelines, or on a combination of the two.

Discharges from similar facilities (e.g City of Santa Fe, Village of Ruidoso, Village of Cuba, City of Springer, City of Aztec etc) are required to meet effluent limitations for total suspended solids (TSS) at monthly average of 20 mg/l and daily maximum of 30 mg/l. Therefore, based on these similar permitted facilities, using BPJ, effluent limitations for TSS are established.

2. EFFLUENT LIMITATIONS

The following technology-based effluent limitations are proposed:

Outfall 001:

PARAMETERS/STORET CODES	DISCHARGE LIMITATIONS/REPORTING REQUIREMENTS		
	QUANTITY/LOADING lbs/day	QUALITY/CONCENTRATION Other Units, Specify	
	MONTHLY AVG	MONTHLY AVG	DAILY MAX
Flow STORET: 50050	N/A	Report MGD	Report MGD
TSS STORET: 00530	N/A	20 mg/l	30 mg/l

Because a discharge of backwash water and flushing water occurs only when the operation of backwash takes place, it is not a continuous discharge. Mass limitations are not established in this proposed permit.

pH.

The pH shall not be less than 6.6 standard units or greater than 8.8 standard units at any time, according to the New Mexico Standards for Interstate and Intrastate Surface Waters, Segment Number 20.6.4.209. The pH shall be monitored 1/week by grab sample.

3. MONITORING FREQUENCIES FOR LIMITED PARAMETERS

Regulations require permits to establish monitoring requirements to yield data representative of the monitored activity [40 CFR122.48(b)] and to assure compliance with permit limitations [40 CFR122.44(i)(1)].

PARAMETERS/STORET	MONITORING REQUIREMENTS	
	FREQUENCY OF REPORTING	SAMPLE TYPE
Flow STORET: 50050	Daily	Estimate
TSS STORET: 00530	1/Month	Grab

The draft permit establishes a grab sampling with monitoring frequency of once per month for TSS. The backwash water and flushing water originating from potable water treatment plant are discharged to a sedimentation basin and then discharged to the Eagle Creek. As a result, a grab sample is representative of the effluent water quality.

D. WATER QUALITY-BASED EFFLUENT LIMITATIONS/CONDITIONS

1. GENERAL COMMENTS

Effluent limitations and/or conditions established in the draft permit are in compliance with State water quality standards and the applicable State water quality management plan.

The discharge of the effluent from the Ruidoso-Alto Crest Drinking water Treatment Plant (WTP) is to an ephemeral reach of Eagle Creek directly below the Alto Reservoir in water quality Segment 20.6.4.97, thence to the Rio Ruidoso in water quality Segment 20.6.4.209, thence to the Rio Hondo.

The nearest gauge for stream flow in Eagle Creek is above Alto Reservoir - USGS Gauge Station 08387600. The reservoir alters the flow of the river so the upstream gauge cannot be used to represent the stream flow at the point of discharge. There are no downstream gauges that are close enough to provide an adequate representation of the actual stream flow of the receiving waters in Eagle Creek at the Outfall of the WTP. Based on the observations made by Doug Eib of the NMED-Surface Water Quality Bureau - Standards and Surveillance group, the 4Q3 of the stream at the Outfall of the facility is 0 cfs.

NMED water quality standards (Title 20, Chapter 6 Part 4 Section 11) has provision for a ‘modified harmonic mean.’ This modified harmonic mean adjusts for zero flow values (0 cfs) if found in USGS gauge data. For gauge 08387600, a modified harmonic mean of 0.2085 cfs was calculated. The period of record used was from April 27, 1988, to September 30, 2005.

2. WATER QUALITY-BASED LIMITS

The Clean Water Act in Section 301(b) requires that effluent limitations for point sources include any limitations necessary to meet water quality standards. Federal regulations found at 40CFR122.44(d) state that if a discharge poses the reasonable potential to cause an in-stream excursion above a water quality criterion, the permit must contain an effluent limit for that pollutant.

In accordance with 20.6.4 NMAC, the permit must be developed to allow for the maintenance and attainment of acute numerical criteria at the point of discharge to the receiving stream and for the maintenance and attainment of chronic numerical criteria at the edge of the mixing zone.

The pollutant concentrations contained in the permit application were measured against State numeric water quality standards, and these are shown in the attached spreadsheet.

Based on the sampling results provided by the permittee, gross alpha, total copper, total lead, total nickel, total selenium, and total zinc showed reasonable potential to cause exceedances of State water quality numerical Standards for livestock/wildlife, acute, and chronic criteria. As a result, water quality-based effluent limitations, monitoring requirements, have been established in the proposed permit for these parameters. A 3-year compliance schedule has also been established in the proposed permit for all the above mentioned parameters except total selenium. Gross alpha, total copper, total lead, total nickel, and total zinc are to be monitored monthly.

The current permit has limitations and monthly monitoring requirements for total selenium. These requirements are continued in the proposed permit since laboratory data for total selenium showed reasonable potential to exceed water quality numerical standards for total selenium.

Water Quality Screening For State Human Health Protection Bioaccumulation Criteria
Since Water Treatment Plants are considered industrial dischargers, and the plant's discharges are to an ephemeral reach of Eagle Creek, the permittee tested for all human health criteria pollutants, except 2,3,7,8-TCDD dioxin. Results of the data submitted to EPA showed that none of these parameters showed reasonable potential to cause or contribute to the exceedances of the human health Water Quality Standards. The harmonic mean used in the screening is 0.2085 cfs.

The permittee will need to submit data for radium-226, radium-228, and 2,3,7,8-TCDD dioxin during the public comment period or be subject to limitations, monitoring and reporting requirements of these parameters in the final permit.

Total Residual Chlorine.

The plant discharges into the receiving water named Eagle Creek, an ephemeral reach; thence to the Rio Ruidoso into Rio Hondo in Waterbody Segment No.20.6.4.209 of the Pecos River Basin. Based on the dilution factor, chronic criteria of 11 ug/l is more restrictive than the acute end of pipe criteria of 19 ug/l as shown below:

The critical dilution is calculated as follows:

Qe/(FQa+Qe), where:

Qe = facility flow (0.104 MGD or 0.16 CFS)
Qa = critical low flow of the receiving waters (Qa = 0 CFS)
F = fraction of stream allowed for mixing (1.0)

Critical Dilution = 0.16 CFS/[(1.0)(0) +0.16]
=1
= **100 %**

The calculated in-stream concentration for the chronic would be : 11 ug/l / 1 = 11 ug/l. The acute end- of-pipe (no dilution) concentration for chlorine is 19 ug/l. As a result, in-stream concentration for chronic is more stringent than the end-of-pipe concentration for acute criteria of 19 ug/l, since 11 ug/l is less than 19 ug/l.

Hence, the discharger is required to meet the NO MEASURABLE total residual chlorine and will be included in the proposed permit, as follows:

After treatment and prior to final disposal, the effluent shall contain NO MEASURABLE total residual chlorine (TRC) at any time. NO MEASURABLE will be defined as no detectable concentration of TRC as determined by any approved method established in 40 CFR Part 136. Thus, the "no measurable TRC concentration" for chlorine becomes the permit limit. If, during the term of this permit the minimum quantification level for TRC becomes less than 11 ug/l, then 11 ug/l shall become the effluent limitation. The effluent limitation for TRC is the instantaneous maximum and can not be averaged for reporting purposes. The maximum TRC shall be monitored daily by grab sample. TRC shall be measured within fifteen (15) minutes of sampling.

Solids and Foam

The proposed permit prohibits the discharge of floating solids or visible foam in other than trace amounts.

3. WHOLE EFFLUENT TOXICITY TESTING

a. GENERAL COMMENTS

The State has established narrative criteria which, in part, state that:

"Surface waters of the State shall be free of toxic pollutants from other than natural causes in amounts, concentrations or combinations that affect the propagation of fish or that are toxic to humans, livestock or other animals, fish or other aquatic organisms; ..." (NM Standards 20.6.4.13 .F)

The Implementation Guidance for NM Standards state that:

> "Biomonitoring requirements will be applied to all major dischargers and those minor dischargers with known or potential problems to cause or contribute to exceedances of applicable NM Standards, numeric or narrative water quality criteria in waters with existing or designated fishery uses" (Section VI. Narrative Toxics Implementation)

The New Mexico Water Quality Control Commission revised the State's Water Quality Standards in 2005. A key concept in the 2005 revisions was to adopt the concept of aquatic life use protection in lieu of the former approach where subcategories of "fishery" use designations were employed. According to the "Toxics Implementation Guidance - Whole Effluent Toxicity" for the State of New Mexico dated December 16, 2005, biomonitoring requirements are included in the proposed permit because the receiving water is characterized with a limited aquatic life as one of its designated uses.

b. PERMIT ACTION

The proposed permit requires the permittee to perform biomonitoring tests for Daphnia pulex consistent with EPA's Post Third Round Policy and Strategy as well as State's Implementation Guidance. The facility's average flow is 0.104 MGD (0.16 cfs), and the applicable 4Q3 is 0 cfs.

The permit requires five (5) dilutions in addition to the control (0% effluent) to be used in the toxicity tests. These additional effluent concentrations shall be 32 %, 42%, 56 %, 75%, & 100%, with the low-flow effluent concentration (critical low-flow dilution) defined as 100% effluent. According to the implementation guidance for ephemeral, acute testing for Daphnia pulex is required at a frequency of once in five years.

Modification or revocation of the permit is subject to the provisions of 40 CFR124.5.

4. IMPAIRED WATER- 303(d) LIST

The receiving stream, Eagle Creek, is not included in the "2004-2006 State of New Mexico Integrated Clean Water Act §303(d)/§305(b) Report" requiring Total Maximum Daily Loads (TMDL's). Therefore, no additional requirements beyond the previously described technology-based or water quality-based effluent limitations and monitoring requirements are established in the proposed permit.

5. ANTIDEGRADATION

The New Mexico 20.6.4.8 NMAC "Antidegradation Policy and Implementation Plan" sets forth the requirements to protect designated uses through implementation of the State water quality standards. The limitations and monitoring requirements set forth in the proposed permit are developed from the State water quality standards and are protective of those designated uses. Furthermore, the policy sets forth the intent to protect the existing quality of those waters, whose quality exceeds their designated use. The permit requirements are protective of the assimilative capacity of the receiving waters, and are protective of the designated uses of that water, per 20.6.4.8.A.2 NMAC.

6. REOPENER

The permit may be reopened and modified during the life of the permit if relevant portions of the State of New Mexico Standards for Interstate and Intrastate Surface Waters are revised or remanded by the New Mexico Water Quality Control Commission. In addition, the permit may be reopened and modified during the life of the permit if relevant procedures implementing the Water Quality Standards are either revised or promulgated by the New Mexico Environment Department. Should the State adopt a State water quality standard, this permit may be reopened to establish effluent limitations for the parameter(s) to be consistent with that approved State standard in accordance with 40CFR122.44(d). Modification of the permit is subject to the provisions of 40CFR124.5.

IX. ENDANGERED SPECIES

Five species in Lincoln County are listed as Endangered or Threatened according to the the New Mexico Ecological Services Field Office website. The endangered and threatened species include the Bald Eagle, Mexican Spotted Owl, Black-footed ferret, Northern aplomado falcon and the Kuenzler Hedgehog cactus.

The proposed permit includes loadings, limitations, and monitoring requirements on the limited parameters. The limitations and monitoring requirements are for pH, gross alpha, total copper, total lead, total nickel, total selenium, total zinc, total residual chlorine, and Total Suspended Solids.

After review, EPA has determined that the reissuance of Permit No. 0028533 will have “no effect” on listed threatened and endangered species nor will adversely modify designated critical habitat. EPA makes this determination based on the following:

a. No changes have been made to the US Fish and Wildlife list of threatened and endangered species and critical habitat designation in the area of the discharge since prior issuance of the permit. The American peregrine falcon, as well as the similar Arctic peregrine falcon were delisted and has become effective (50CFR17, Final Rule, effective 8/25/99) prior to the current permit issuance on June 27, 2001.

b. EPA concluded “no effect” during the previous issuance of the permit, issued on June 27, 2001 and has received no additional information since then which would lead to revision of that “no effect” determination.

c. EPA determines that Items a and b result in no change to the environmental baseline established by the previous permit, therefore, EPA concludes that reissuance of this permit will have “no effect” on listed species and designated critical habitat.

X. VARIANCE REQUESTS

No variance requests have been received.

XI. CONSIDERATION FOR MONITORING FREQUENCY REDUCTION

EPA is not considering monitoring frequency reduction during this permit issuance cycle based upon the permittee's improper record keeping practices as well as some unaccounted backwash flows when more than one filter per day is backwashed. The permittee also regularly exceeds its 30-day average effluent limitations for total selenium. As a result, the monitoring frequency for the limited parameters established in the previous permit is not changed in the proposed permit. However, should the facility exhibit long term compliance with the proposed permit limitations, they may be eligible for monitoring frequency reduction during the next permit issuance cycle.

XII. ADMINISTRATIVE RECORD

The following section is a list of the fact sheet citations to applicable statutory or regulatory provisions and appropriate supporting references to the administrative record required by 40 CFR124.9:

A. APPLICATION(S)

NPDES Form 2A Application Overview (EPA Form 3510-2A), signed January 27, 2006, additional permit application information sent via email July 11, 2006, July 16, 2006, and July 18, 2006.

B. CLEAN WATER ACT CITATIONS

Section 101
Section 101(a)(3)
Section 303
Section 304(e)
Section 308
Section 401(a)(1)
Section 401(a)(2)

C. 40 CFR CITATIONS

STANDARD CITATIONS
122.44
122.44(a)
122.44(d)
122.44(d)(1)
122.44(d)(1)(v)
122.44(i)(1)
122.44(i)(2)
122.44(l)(2)(ii)
122.45(c)(3)
122.46(a)
122.47
122.48
122.48(b)
122.62(a)

122.62(a)(2)
122.62(b)(1)
122.64(a)(3)
124.5
124.5(a)
124.5(c)
124.5(c)(2)
124.15(b)(1)
124.10
124.53
124.63(a)(1)
124.63(a)(2)
131 amended at 57FR60848, 12/22/92

D. STATE WATER QUALITY REFERENCES

STATE ADMINISTRATIVE CODE

The general and specific stream standards are provided in "State of New Mexico Standards for Interstate and Intrastate Surface Water," (20.6.4NMAC, as amended through February 16, 2006).

WATER QUALITY STANDARDS IMPLEMENTATION

Region 6 Implementation Guidance for State of New Mexico Standards for Interstate and Intrastate Stream, May 5, 1995.

E. MISCELLANEOUS REFERENCES

Policy for the Development of Water Quality-Based Permit Limitations for Toxic Pollutants [49FR9016-9019, March 9, 1984]

EPA Region 6 "Policy for Post Third Round NPDES Permitting" and "Post Third Round NPDES Permit Implementation Strategy," October 1, 1992.

National Toxics Rule 57FR60848, December 22, 1992.

Endangered Species Information [Online]. U.S. Fish and Wildlife Service, Southwest Region Ecological Services. http://ifw2es.fws.gov/EndangeredSpecies/